TRANSMITTAL OF APPEAL BRIEF	Docket No. 1248-0674P

In re Application of: Yasuaki FUKADA et al.

Application No.	Filing Date	Examiner	Group Art Unit
10/681,167-Conf. #006469	October 9, 2003	A. H. Nguyen	2854

Invention: TWO-SIDE IMAGE FORMING APPARATUS

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: March 2, 2006 .

The fee for filing this Appeal Brief is $ 500.00 .

[X] Large Entity [ ] Small Entity

[X] A petition for extension of time is also enclosed.

The fee for the extension of time is $ 1,020.00 .

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This sheet is submitted in duplicate.

Dated: October 13, 2006

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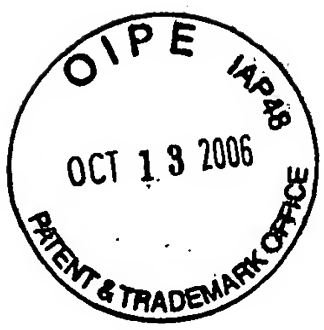

MS APPEAL BRIEF
PATENT
1248-0674P

IN THE U.S. PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF		BEFORE THE BOARD OF APPEALS	
Yasuaki FUKADA et al.		APPEAL NO.:	
APPL. NO.:	10/681,167	GROUP:	2854
FILED:	October 9, 2003	EXAMINER:	A. NGUYEN
FOR:	TWO-SIDE IMAGE FORMING APPARATUS		

APPEAL BRIEF

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FOR:	TWO-SIDE IMAGE FORMING APPARATUS		

APPEAL BRIEF
ON BEHALF OF APPELLANTS:
YASUAKI FUKAEA ET AL.

MS APPEAL BRIEF
Board of Patent Appeals
and Interferences
P.O. Box 1450
Alexandria, VA 22313-1450

October 13, 2006

Sir:

Appellants hereby submit the following Appeal Brief in support of the Notice of Appeal filed March 2, 2006 and resubmitted on May 9, 2006. This Appeal is from the Decision of the Examiner dated December 2, 2005, rejecting claims 1-17, which are reproduced as an Appendix to this brief.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the entire interest in the above-captioned patent application, SHARP KABUSHIKI KAISHA, 22-22 Nagaike-cho Abeno-ku, Osaka, 545-8522, JAPAN.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's Decision in this Appeal.

III. STATUS OF THE CLAIMS

Claims 1-17 are pending in the above-captioned application. Claims 1-17 are rejected and the subject of the present Appeal. Claims 1, 4, 13 and 17 are independent.

IV. STATUS OF AMENDMENTS

No amendments have been presented after the rejection of December 2, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The summary of the claimed invention herein, including the exemplary support provided in the form of citations to the specification of the present application, is being made to comply with the Patent Office rules in submitting briefs and is not to be considered as limiting the claimed invention.

The claimed invention of claim 1 is directed to a two-side image forming apparatus including a first sheet-transferring path 7, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet

storage section [Specification, page 8, lines 12-16]; a second sheet-transferring path 8, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section [Specification, page 8, line 22 through page 9, line 1], an intermediate roller R2 provided along the second sheet-transferring path [Specification, page 9, lines 4-5]; and a resist roller PS for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path [Specification, page 9, lines 6-10], wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation [Specification, page 22, lines 2-5], the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller [Specification, page 18, lines 6-13].

The claimed invention of claim 2 provides the first sheet-transferring path including switch-back means R3, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path [Specification, page 8, lines 17-20].

The claimed invention of claim 3 includes second sheet detection means in the second sheet-transferring path S3, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path, the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing [Specification, page 16, lines 11-21; page 18, lines 6-13; page 31, lines 3-11].

The claimed invention of claim 4 is directed to a two-side image forming apparatus a first sheet-transferring path 7, for use in one-side image formation, for transferring, to a printed sheet

storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section [Specification, page 8, lines 12-16]; a second sheet-transferring path 8, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section [Specification, page 8, line 22 through page 9, line 1], an intermediate roller R2 provided along the second sheet-transferring path [Specification, page 9, lines 4-5]; and a resist roller PS for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path [Specification, page 9, lines 6-10], wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation [Specification, page 22, lines 2-5], the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller [Specification, page 18, lines 6-13], wherein the first sheet-transferring path includes switch-back means R3, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path [Specification, page 8, lines 17-20], wherein the resist roller, located at a crossing point between the second sheet-transferring path and that part of the first sheet-transferring path which is between the unprinted sheet storage section and the image transcribing section, adjusts a resuming timing for resuming the transfer of the sheet to the image transcribing section in order to adjust on which part of the sheet an image is to be transcribed by the image transcribing section [Specification, page 9, lines 4-9].

The claimed invention of claim 5 is directed to a two-side image forming apparatus wherein two sheets are transferred concurrently in the overall sheet-transferring path [Specification, page 5, lines 13-15].

The claimed invention of claim 6 provides wherein the switch-back means reverses a transfer direction of a first sheet and transfers the first sheet into the second sheet-transferring path in a period in which a second sheet is supplied from the unprinted sheet storage section, the second sheet is transferred via the first transferring path, and a transfer direction of the second sheet is reversed, the second sheet being to be subjected to image processing after the first sheet [Specification, page 28, lines 15-24].

The claimed invention of claim 7 provides wherein the switch-back means reverses the transfer direction of the second sheet and transfers the second sheet into the second sheet-transferring path, in a period in which the first sheet which has been printed on its one surface is transferred through the second sheet-transferring path, the first sheet is printed on its reverse surface in the first sheet-transferring path and then, the first sheet is transferred to the printed sheet storage section [Specification, page 29, lines 1-12].

The claimed invention of claim 8 provides wherein a third sheet that is to be processed after the second sheet, is solely transferred in the overall sheet-transferring path, after the second sheet is transferred to the printed sheet storage section, the second sheet having been transferred into the second sheet-transferring path, and printed on its reverse surface in the first sheet-transferring path [Specification, page 29, lines 13-23].

The claimed invention of claim 9 provides wherein the second sheet detection means and the PS roller are located so that L1 < L2, where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, and L2 is a distance from the second sheet detection means to the resist roller along the second sheet-transferring path [Specification, page 19, line 17 through page 20, line 7].

The claimed invention of claim 10 provides wherein the resist roller and the switch-back means are so located that L1 < L3, where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, and L3 is a distance from the resist roller to the switch-back means along the first sheet-transferring path [Specification, page 20, lines 8-15].

The claimed invention of claim 11 provides wherein the first sheet-transferring path, the second sheet-transferring path, and the resist roller are so located that L1 < L4, where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, L4 is a distance, along the second sheet-transferring path, from (a) a crossing point between the second sheet-transferring path and the downstream part of the first sheet-transferring path with respect to the image transcribing section, to (b) the resist roller [Specification, page 20, line 16 through page 21, line 6].

The claimed invention of claim 12 provides wherein in case where sheets in an even number are to be printed, the switch-back means performs, once or plural times, such (i) operation as to reverse a transfer direction of the first sheet and transfer the first sheet into the second sheet-transferring path, in a period in which the second sheet is supplied from the unprinted sheet storage section, the second sheet is transferred via the first sheet-transferring path and then a transfer direction of the second sheet is reversed by the switch-back means, and such (ii) operation as to reverse the transfer direction of the second sheet and transfer the second sheet into the second sheet-transferring path, in a period in which a transfer direction of the first sheet is reversed, the first sheet is transferred through the second sheet transferring path, the first sheet is printed on its reverse surface in the first sheet-transferring path, and then the first sheet is transferred into the printed sheet storage section; and in case where sheets in an odd number are to be printed, the switch-back means performs the operation once or plural times, and then a third sheet that is transferred after the second

sheet is solely transferred in the overall sheet-transferring path [Specification, page 23, lines 17-19, Figs. 1-5 and 7].

The claimed invention of claim 13 is directed to a two-side image forming apparatus including a first sheet-transferring path 7, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section [Specification, page 8, lines 12-16]; a second sheet-transferring path 8, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section [Specification, page 8, line 22 through page 9, line 1], an intermediate roller R2 provided along the second sheet-transferring path [Specification, page 9, lines 4-5]; and a resist roller PS for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path [Specification, page 9, lines 6-10], wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation [Specification, page 22, lines 2-5], the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller [Specification, page 18, lines 6-13], wherein the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path [Specification, page 8, lines 17-20], wherein the first sheet-transferring path, the second sheet-transferring path, and the switch-back means respectively include sheet transfer driving sections, which are independently driven by different driving sources [Specification, page 24, lines 20-24].

The claimed invention of claim 14 includes first sheet detection means S1 in the first-sheet-transferring path, first sheet detection means for detecting whether a sheet is present or absent; second sheet detection means S3 in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path; and third sheet detection means S2 near the switch-back means, the third sheet detection means for detecting whether a sheet is present or absent, the sheet transfer driving sections of the first sheet-transferring path, the second sheet-transferring path, and the switch-back means being respectively driven in accordance with detection results of the first, second, and third sheet detection means [Specification, page 13, line 22 through page 15, line 24].

The claimed invention of claim 15 is directed to the two-side image forming apparatus wherein the first sheet detection means is located at an immediate upstream of the resist roller [Specification, page 9, lines 10-12], the first sheet detection means stopping the resist roller in a predetermined timing, if the first sheet detection means detects that a sheet is passing at the immediate upstream of the resist roller while another sheet is being transferred in the overall sheet-transferring path [Specification, page 30, line 22 through page 31, line 2].

The claimed invention of claim 16 provides wherein the second sheet detection means stops a sheet that the second sheet detection means detects, if the second sheet detection means detects the sheet is passing in the second sheet-transferring path; and rotation of the resist roller and transfer of the sheet in the second sheet-transferring path are resumed in a predetermined timing, when both of the first sheet detection means and the second sheet detection means detect sheets [Specification, page 31, lines 3-11].

The claimed invention of claim 17 is directed to a two-side image forming apparatus including a first sheet-transferring path 7, for use in one-side image formation, for transferring, to a

printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section [Specification, page 8, lines 12-16]; a second sheet-transferring path 8, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section [Specification, page 8, line 22 through page 9, line 1], an intermediate roller R2 provided along the second sheet-transferring path [Specification, page 9, lines 4-5]; a resist roller PS for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path [Specification, page 9, lines 6-10], wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation [Specification, page 22, lines 2-5], the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller [Specification, page 18, lines 6-13]; and second sheet detection means in the second sheet-transferring path S3, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path, the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing [Specification, page 16, lines 11-21; page 18, lines 6-13; page 31, lines 3-11].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Final Office Action provides one (1) grounds of rejection for review on Appeal:

1) Claims 1-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Noguchi et al.* (USP 4,978,980)) (hereinafter "*Noguchi*") in view of *Yasui et al.* (USP 5,839,032) (hereinafter "*Yasui*").

VII. ARGUMENTS

A. The Rejection Fails to Establish *Prima facie* Obviousness of Claims 1-17 Based on the Teaching of *Noguchi* in view of *Yasui*

1. Argument Summary

The reasoning provided in support of the rejection of claims 1-17 under 35 U.S.C. § 103(a) as being unpatentable over *Noguchi* in view of *Yasui* fails to establish *prima facie* obviousness. Generally, the deficiencies of the rejection are that: (a) the rejection attributes certain claimed features to the secondary reference, *Yasui*, that a detailed reading of the reference reveals are not taught therein; (b) when the nature and purpose of invention disclosed in *Yasui* is recognized, it is evident that there is no suggestion or motivation cited in support of the rejection, cited in the reference itself, or in knowledge generally available to those skilled in the art to combine the teachings of *Yasui* with the teachings of *Noguchi* in a manner asserted by the rejection; and (c) by asserting that it would have been obvious to combine the teachings of the references without a proper suggestion or motivation in the applied references or elsewhere, the rejection appears to rely on impermissible hindsight reasoning.

2. The Legal Requirements of *Prima facie* Obviousness

To establish *prima facie* obviousness, all claim limitations must be taught or suggested by the prior art and the asserted modification or combination of the prior art must be supported by some teaching, suggestion, or motivation in the applied references or in knowledge generally available to one skilled in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The prior art must suggest the desirability of the modification in order to establish a *prima facie* case of obviousness. In re Brouwer, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1995). It can also be said that the prior art must collectively suggest or point to the

claimed invention to support a finding of obviousness. In re Hedges, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986); In re Ehrreich, 590 F.2d 902, 908-909, 200 USPQ 504, 510 (C.C.P.A. 1979).

The teaching or suggestion to make the asserted combination or modification of the primary reference must be found in the prior art and cannot be gleaned from Appellant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). "There are three possible sources for a motivation to combine references: the nature of the problem to be resolved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). In other words, the use of hindsight to reconstruct the claimed invention is impermissible. Uniroyal Inc. v. Rudlan-Wiley Corp., 5 USPQ 1434 (Fed. Cir. 1983).

When considering the differences between the primary reference and the claimed invention, the question for assessing obviousness is not whether the differences themselves would be been obvious, but instead whether the claimed invention as a whole would have been obvious. Stratoflex Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983).

"In order to rely on a reference as a basis for rejection of an Appellant's invention, the reference must either be in the field of Appellant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992); see also In re Deminski, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); In re Clay, 966 F.2d 656, 659, 23 USPQ2d 158, 1060-61 (Fed. Cir. 1992).

3. The Examiner Fails to Establish *Prima facie* Obviousness in support of his rejection of Claim 1

The invention of claim 1 is directed to a two-side image forming apparatus including a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage

section; a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section, an intermediate roller provided along the second sheet-transferring path; and a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller.

In support of the Examiner's rejection of claim 1, the Examiner asserts in the Official Action mailed December 2, 2005, on pages 2-3, as follows:

> With respect to claims 1, 3, 5 and 17, Noguchi et al. teaches a two-side image forming apparatus having a first transferring path 508 for transferring one-side printed sheet to a tray 507 from a supply tray or a sheet storage section 501 and a second transferring path or a duplex path 509 connected to the first transferring path for feeding the one-side printed sheet to an imaging forming means 505 so that the plurality of sheets are transferred concurrently in the transferring paths, an intermediate roller 515 and a sensor (d) in the second path 609 provided along the second transferring path and a register or resister roller 405 (Noguchi et al., figs. 21, 22 and 29). Noguchi et al. does not clearly teach the intermediate roller which is in synchronism with a resumption of rotation of the resist roller, Yasui et al. teaches the intermediate roller 91 or 93 provided with the second sheet-transferring path 92 for synchronizing with the rotation of the resist rollers 34a, 34b. In view of the teaching of Yasui et al. it would have been obvious to one of ordinary skill in the art to modify the two-side image forming apparatus of Noguchi et al. by providing the intermediate roller as taught by Yasui et al. for optimizing the print quality on two sides of a sheet.

Appellants respectfully disagree that *Yasui* teaches "a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller," as required by claim 1 and that there is no motivation to combine the teachings of the references, as asserted by the Examiner.

a. The Examiner relies on two separate embodiments of *Noguchi* to teach claim elements with out providing evidence as to why one skilled in the art would combine the purportedly taught elements to teach the invention as set forth in claim 1.

In support of the Examiner's rejection of claim 1, as noted above, the Examiner asserts that *Noguchi* discloses a first sheet transferring path 508 and second sheet transferring path 509. These paths are disclosed in Figs. 21-28 of *Noguchi* and described in col. 6, lines 54-55 as FIGS. 21 to 28 are cross-sectional views showing the flow sheets in another recording apparatus.

The Examiner further relies on sensor (d) of the "second path 609" to support his rejection of the claim elements. However, sensor (d) and path 609 are depicted in Fig. 29, which is described in col. 6, lines 56-58 as "a cross-sectional view showing another embodiment of the recording apparatus to which the present invention is applied." First, the Examiner indicates that he is relying on 509 to teach the second sheet transferring path. Second, as Figs. 21-28 and Fig. 29 are directed to different embodiments, the Examiner's reliance on these two separate embodiments to support his assertion that *Noguchi* teaches claimed elements is wholly improper, without sufficient evidence as to why one skilled in the art would modify one of the separate embodiments with the elements of another separate embodiment. It appears that the Examiner has merely picked unrelated teachings from *Noguchi* and asserted them against the claim without considering the claimed invention as a whole.

For at least this reason, Appellants respectfully submit that the Examiner's outstanding rejection of claim 1 is improper.

b. *Yasui* fails to teach or suggest "a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller," as required by claim 1.

As noted above, the Examiner admits that *Noguchi* fails to teach or suggest the intermediate roller, which is in synchronism with a resumption of rotation of the resist roller. The Examiner relies on the teachings of *Yasui et al.* to cure the deficiencies of the teachings of *Noguchi* asserting *Yasui et al.* discloses intermediate roller 91 or 93 provided with a second sheet transferring path 92 for synchronizing with the rotation of the resist rollers 34a, 34b. Appellants maintain that the teachings of *Yasui et al.* are insufficient to cure the deficiencies of the teachings of *Noguchi.*

Claim 1 recites, *inter alia*, a two-side image forming apparatus comprising a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller.

First, Appellants submit that the Examiner has failed to address the "resumption of rotation" in the outstanding rejection. The Examiner, while admitting that *Noguchi et al.* fails to teach this claim element, merely asserts that *Yasui et al.* teaches "intermediate roller 91 or 93 provided with a second sheet transferring path 92 for synchronizing with the rotation of the resist rollers 34a, 34b." However, the Examiner fails to address the claim term "**resumption** of rotation."

Second, *Yasui et al.* fails to provide any disclosure regarding resumption of rotation for the purported resist rollers 34a, 34b. As such, Appellants submit that *Yasui et al.* fails to cure the deficiencies of *Noguchi et al.* by failing to teach or suggest the intermediate roller, which is in synchronism with a **resumption of rotation of the resist roller**. As neither of the references, either alone or in combination, assuming these references are combinable, which Appellants do not admit,

teach or suggest all of the claim elements, it is respectfully submitted that claim 1 is not obvious over the references as cited by the Examiner.

c. The Examiner has failed to provide proper motivation to combine the references

In support of the Examiner's rejection of claim 1, the Examiner asserts one skilled in the art would be motivated to combine the teachings of *Yasui et al.* with the teachings of *Noguchi et al.* "for optimizing the print quality of two sides of a sheet." However, neither of these references suggests this desirability as asserted by the Examiner. There is no disclosure in either of the references that suggest that the "the intermediate roller, which is in synchronism with a resumption of rotation of the resist roller" affects print quality. As such, Appellants submit that there is no motivation to combine the references as asserted by the Examiner. Thus, the Examiner has failed to establish *prima facie* obviousness.

d. The Examiner's combination of teachings of references amounts to impermissible hindsight

By asserting it would have been obvious to combine the teachings of the cited references no suggestion or motivation in the applied references, the Examiner appears to rely on Appellants' own specification for the motivation, which amounts to impermissible hindsight.

e. The primary reference teaches away from the Examiner's suggested modification

The Examiner has made clear error in combining the teachings of the cited references without considering all of the teachings of the primary reference, including those teachings that teach away from the purported modification.

The disclosure of *Noguchi et al.* is directed to a control method for a both-surface multiplex recording apparatus. One of the primary purposes of the *Noguchi et al.* apparatus is to reduce print waiting time of the recording sheets (col. 5, lines 30-35 and 57-60). *Noguchi et al.* accomplishes this by providing for an apparatus that includes two conveyance path velocities. The Examiner seeks to modify the *Noguchi et al.* apparatus by adjusting when the "resist" rollers resume rotation. However, by doing so, the speed at which the paper is being processed through the *Noguchi et al.* apparatus would be reduced. *Noguchi et al.* thus, teaches away from such a modification that would reduce the print waiting time.

f. <u>The proposed modification of the primary reference would change the principle operation of the primary reference</u>

In support of the Examiner's rejection, the Examiner seeks to modify *Noguchi et al.* to provide a two-side image forming apparatus comprising a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller. However, as noted above, *Noguchi et al.* seeks to synchronize the processing of paper through the apparatus by varying the conveyance velocity. [1]

The proposed modification of the apparatus of *Noguchi et al.* would change the principle manner in which the paper processing is synchronized. Appellants respectfully submit that by doing so, the Examiner is changing the principle operation of the *Noguchi et al.* apparatus, which is insufficient to establish *prima facie* obviousness.

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[1] It is well established that if the proposed modification or combination of the prior art would change the principle of operation of the prior art being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

For all of the reasons set forth above, Appellants respectfully submit that the Examiner has failed to establish *prima facie* obviousness in support of his rejection of claim 1 Appellants respectfully submit that claim 1 is patentable over the references as cited by the Examiner.

4. The Examiner fails to establish *prima facie* obviousness by failing to consider all of the claim elements and further failing to provide references that teach or suggest all of the elements of Claim 3

Claim 3 depends directly on claim 1. Appellants submit that claim 3 is allowable for the reasons set forth above with regard to claim 1 at least based upon its dependency on claim 1. Appellants further submit that dependent claim 3 is separately patentable and offer the following additional arguments for the invention of claim 3.

The invention of claim 3 is directed a two-side image forming apparatus including second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path, the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing.

The Examiner's rejection of claim 3 is set forth above. Nowhere in the Examiner's rejection does the Examiner consider any of the elements as recited in the claim. Further, the Examiner has failed to identify whether the Examiner is relying on *Noguchi* or *Yasui* to support his rejection of the claim elements. The Examiner has rejected the claim without setting forth any statement regarding the teachings of the cited references, the deficiencies of the teachings of the cited references, how the references are being combined, and without providing any statement of motivation as to why one skilled in the art would be so motivated to may any purported combination.

As the Examiner has failed to consider any of the claim elements, and further has failed to assert any statement to support a purported *prima facie* assertion of obviousness, the outstanding rejection should be withdrawn.

5. The Examiner Fails to Establish *Prima facie* Obviousness in support of his rejection of Claim 4

In support of the Examiner's rejection of claim 4, the Examiner asserts in the Official Action mailed December 2, 2005, on page 3 as follows:

> With respect to claim 4, *Noguchi* et al. teaches all that is claimed, except the rollers located at the crossing point between the first and second transferring paths. Yasui et al. teaches a two-side image forming apparatus having the resist roller 34a or 34b located at the crossing point between the first conveying path 33 and the second conveying path or the duplex path 92 (Yasui et a., Fig. 3). Therefore, in view of the teaching of Yasui et al., it would have been obvious to one of ordinary skill in the art to modify the image forming apparatus of Noguchi et al. by providing the rollers located that the crossing point between the two conveying paths as taught by Yasui et al. to improve the efficiency of transferring sheets in the two-side image forming apparatus.

The invention of claim 4 is directed to a two-side image forming apparatus comprising: a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section; a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section, an intermediate roller provided along the second sheet-transferring path; and a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller, wherein

the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path, wherein the resist roller, located at a crossing point between the second sheet-transferring path and that part of the first sheet-transferring path which is between the unprinted sheet storage section and the image transcribing section, adjusts a resuming timing for resuming the transfer of the sheet to the image transcribing section in order to adjust on which part of the sheet an image is to be transcribed by the image transcribing section.

Again, the Examiner fails to consider all of the elements as recited in the claim. For example, claim 4 recites, "wherein the resist roller, located at a crossing point between the second sheet-transferring path and that part of the first sheet-transferring path which is between the unprinted sheet storage section and the image transcribing section, adjusts a resuming timing for resuming the transfer of the sheet to the image transcribing section in order to adjust on which part of the sheet an image is to be transcribed by the image transcribing section." However, the Examiner fails to state what reference his relying upon to teach this claim element, and what motivation there would be to modify *Noguchi* with the teachings of *Yasui*, assuming he was relying on *Yasui*'s teachings.

In addition, the Examiner appears to rely on his rejection of claim 1 to support his rejection of claim 4. Claim 4 includes elements similar to those discussed above with regard to claim 1 and thus, the deficiencies discussed above with regard to claim 1 further apply to the Examiner's rejection of claim 4.

As the Examiner has failed to consider all of the claim elements, and as the Examiner's rejection fails to establish *prima facie* obviousness, claim 4 is patentable over the references as cited.

6. The Examiner Fails to Establish *Prima facie* Obviousness in his rejection of claims 2 and 5

Claims 2 and 5 depend directly on claim 1. Appellants submit that claims 2 and 5 are allowable for the reasons set forth above with regard to claim 1 at least based upon their dependency on claim 1. Appellants further submit that dependent claims 2 and 5 are separately patentable and offer the following additional arguments for the invention of claims 2 and 5.

The rejection of claims 2 and 5 asserts that *Noguchi* teaches the incremental features recited therein. Appellants submit, however, that the rejection's reliance on *Noguchi* as allegedly teaching these incremental features fail to make up for the deficiencies of the rejection applied to claim 1. Thus the Examiner has failed to establish *prima facie* anticipation of dependent claims 2 and 5 by failing to provide a reference that teaches or suggests all of the claim elements.

7. The Examiner Fails to Establish *Prima facie* Obviousness in support of his rejection of Claim 13

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over *Noguchi et al.* in view of *Yasui et al.* In support of this assertion, the Examiner provides a confusing statement regarding what would be obvious with regard without addressing any of the elements recited in the claim.

The invention of claim 13 is directed to a two-side image forming apparatus including a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section; a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section, an intermediate roller provided along the second sheet-transferring path; and a resist roller for synchronizing a timing at

which a sheet is transferred onto the first sheet-transferring path, wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller, wherein the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path, wherein the first sheet-transferring path, the second sheet-transferring path, and the switch-back means respectively include sheet transfer driving sections, which are independently driven by different driving sources.

In support of the Examiner's rejection of claim 13, the Examiner asserts in the final Official action on page 3 as follows:

> With respect to claims 6-16, the selection of a desired period or timing for feeding a sheet from a tray or to an image forming device while the switchback means reverses the other sheet to a second path, and the selection of a desired location of the detection means on the transferring paths would be obvious through routine experimentation tin order to get the maximum number of printed sheets in a shortest time.

However, the Examiner fails set forth prima facie obviousness as the Examiner fails to address any of the elements as recited in the claims; fails to set forth which of the references he is relying upon to teach which elements of the claim; and fails to provide any motivation for any combination of teachings. As such, it is respectfully requested that the outstanding rejection be withdrawn.

8. The Examiner Fails to Establish *Prima facie* Obviousness in support of his rejection of Claims 6-16

The Examiner rejected claims 6-16 under 35 U.S.C. § 103(a) as being unpatentable over *Noguchi et al.* in view of *Yasui et al.* In support of this assertion, the Examiner provides a confusing statement regarding what would be obvious with regard to only a few elements of claims 6-16.

Specifically, the Examiner asserts in the Official Action mailed December 2, 2005, on page 3 as follows:

> With respect to claims 6-16, the selection of a desired period or timing for feeding a sheet from a tray or to an image forming device while the switch back means reverses the other sheet to a second path, and the selection of a desired location of the detection means on the transferring paths would be obvious through routine experimentation in order to get the maximum number of printed sheets in a shortest time.

However, the Examiner fails to particularly identify which of the two cited references he is relying upon to teach or suggest each of the individual elements of the claims. Further, the Examiner fails to set forth any of the proper statements required for establishing *prima facie* obviousness, including any statement of motivation.

In addition, the Examiner fails to properly consider any of the claim elements as recited in claims 6-16. The assertion of the purported elements of claims 6-16 are not inclusive of most of the elements as set forth in these claims.

As the Examiner has failed to properly consider any of the elements as set forth in claims 6-16, the Examiner has failed to establish *prima facie* obviousness. It is respectfully requested that the outstanding rejection be withdrawn.

9. The Examiner Fails to Establish *Prima facie* Obviousness in support of his rejection of Claim 17

The Examiner's rejection of claim 17 is set forth above.

The invention of claim 17 is directed to a two-side image forming apparatus comprising a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section; a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section, an intermediate roller provided along the second sheet-transferring path; a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller; and second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path, the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing.

Again, the Examiner has failed to consider all of the claim elements, including "second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path, the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet

detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing."

Further, claim 17 includes elements similar to those set forth above with regard to claim 1 and thus the Examiner's rejection is deficient for the reasons set forth above with regard to claim 1.

As the Examiner has failed to consider all of the claim elements, and for the reasons set forth above with regard to claim 1, Appellants respectfully submit that claim 17 is patentable over the references as cited.

VIII. CONCLUSION

The withdrawal of the outstanding rejections and the allowance of claims 1-13, 15-26 and 29-36 is earnestly solicited.

Respectfully submitted,

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IX. CLAIMS APPENDIX

1. (Previously Presented) A two-side image forming apparatus comprising:

a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section;

a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section,

an intermediate roller provided along the second sheet-transferring path; and

a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein

the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and

a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller.

2. (Original) The two-side image forming apparatus as set forth in Claim 1, wherein:

the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path.

3. (Original) The two-side image forming apparatus as set forth in Claim 2, further comprising:

second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path,

the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing.

4. (Previously Presented) A two-side image forming apparatus comprising:

a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section;

a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section,

an intermediate roller provided along the second sheet-transferring path; and

a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein

the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and

a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller,

wherein the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path, wherein the resist roller, located at a crossing point between the second sheet-transferring path and that part of the first sheet-transferring path which is between the unprinted sheet storage section and the image transcribing section, adjusts a resuming timing for resuming the transfer of the sheet to the image transcribing section in order to adjust on which part of the sheet an image is to be transcribed by the image transcribing section.

5. (Original) The two-side image forming apparatus as set forth in Claim 1, wherein:

two sheets are transferred concurrently in the overall sheet-transferring path.

6. (Original) The two-side image forming apparatus as set forth in Claim 2, wherein:

the switch-back means reverses a transfer direction of a first sheet and transfers the first sheet into the second sheet-transferring path in a period in which a second sheet is supplied from the unprinted sheet storage section, the second sheet is transferred via the first transferring path, and a transfer direction of the second sheet is reversed, the second sheet being to be subjected to image processing after the first sheet.

7. (Original) The two-side image forming apparatus as set forth in Claim 6, wherein:

the switch-back means reverses the transfer direction of the second sheet and transfers the second sheet into the second sheet-transferring path, in a period in which the first sheet which has

been printed on its one surface is transferred through the second sheet-transferring path, the first sheet is printed on its reverse surface in the first sheet-transferring path and then, the first sheet is transferred to the printed sheet storage section.

8. (Original) The two-side image forming apparatus as set forth in Claim 7, wherein:

a third sheet that is to be processed after the second sheet, is solely transferred in the overall sheet-transferring path, after the second sheet is transferred to the printed sheet storage section, the second sheet having been transferred into the second sheet-transferring path, and printed on its reverse surface in the first sheet-transferring path.

9. (Previously Presented) The two-side image forming apparatus as set forth in Claim 4, wherein:

the second sheet detection means and the PS roller are located so that $L1 < L2$,

where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, and L2 is a distance from the second sheet detection means to the resist roller along the second sheet-transferring path.

10. (Previously Presented) The two-side image forming apparatus as set forth in Claim 4, wherein:

the resist roller and the switch-back means are so located that $L1 < L3$,

where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, and L3 is a distance from the resist roller to the switch-back means along the first sheet-transferring path.

11. (Previously Presented) The two-side image forming apparatus as set forth in Claim 4, wherein:

the first sheet-transferring path, the second sheet-transferring path, and the resist roller are so located that L1 < L4, where L1 is a longest sheet length along the transferring direction the two-side image forming apparatus can deal with, L4 is a distance, along the second sheet-transferring path, from (a) a crossing point between the second sheet-transferring path and the downstream part of the first sheet-transferring path with respect to the image transcribing section, to (b) the resist roller.

12. (Original) The two-side image forming apparatus as set forth in Claim 2, wherein:

in case where sheets in an even number are to be printed, the switch-back means performs, once or plural times, such (i) operation as to reverse a transfer direction of the first sheet and transfer the first sheet into the second sheet-transferring path, in a period in which the second sheet is supplied from the unprinted sheet storage section, the second sheet is transferred via the first sheet-transferring path and then a transfer direction of the second sheet is reversed by the switch-back means, and such (ii) operation as to reverse the transfer direction of the second sheet and transfer the second sheet into the second sheet-transferring path, in a period in which a transfer direction of the first sheet is reversed, the first sheet is transferred through the second sheet transferring path, the first sheet is printed on its reverse surface in the first sheet-transferring path, and then the first sheet is transferred into the printed sheet storage section; and

in case where sheets in an odd number are to be printed, the switch-back means performs the operation once or plural times, and then a third sheet that is transferred after the second sheet is solely transferred in the overall sheet-transferring path.

13. (Previously Presented) A two-side image forming apparatus comprising:

a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section;

a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section,

an intermediate roller provided along the second sheet-transferring path; and

a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein

the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and

a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller,

wherein the first sheet-transferring path includes switch-back means, located at an immediate upstream of the printed sheet storage section, the switch-back means transferring the one-side printed sheet to the second sheet-transferring path,

wherein the first sheet-transferring path, the second sheet-transferring path, and the switch-back means respectively include sheet transfer driving sections, which are independently driven by different driving sources.

14. (Original) he two-side image forming apparatus as set forth in Claim 13, further comprising:

first sheet detection means in the first-sheet-transferring path, first sheet detection means for detecting whether a sheet is present or absent;

second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path; and

third sheet detection means near the switch-back means, the third sheet detection means for detecting whether a sheet is present or absent,

the sheet transfer driving sections of the first sheet-transferring path, the second sheet-transferring path, and the switch-back means being respectively driven in accordance with detection results of the first, second, and third sheet detection means.

15. (Previously Presented) The two-side image forming apparatus as set forth in Claim 14, wherein:

the first sheet detection means is located at an immediate upstream of the resist roller,

the first sheet detection means stopping the resist roller in a predetermined timing, if the first sheet detection means detects that a sheet is passing at the immediate upstream of the resist roller while another sheet is being transferred in the overall sheet-transferring path.

16. (Previously Presented) The two-side image forming apparatus as set forth in Claim 15, wherein:

the second sheet detection means stops a sheet that the second sheet detection means detects, if the second sheet detection means detects the sheet is passing in the second sheet-transferring path; and

rotation of the resist roller and transfer of the sheet in the second sheet-transferring path are resumed in a predetermined timing, when both of the first sheet detection means and the second sheet detection means detect sheets.

17. (Previously Presented) A two-side image forming apparatus comprising:

a first sheet-transferring path, for use in one-side image formation, for transferring, to a printed sheet storage section via an image transcribing section, a sheet supplied from an unprinted sheet storage section;

a second sheet-transferring path, connected to the first sheet-transferring path, for supplying a turned-over one-side printed sheet to the image transcribing section,

an intermediate roller provided along the second sheet-transferring path;

a resist roller for synchronizing a timing at which a sheet is transferred onto the first sheet-transferring path, wherein

the two-image forming apparatus is controlled such that a plurality of sheets are transferred concurrently in an overall sheet-transferring path when performing two-side image forming operation, the overall sheet-transferring path including the first sheet-transferring path and the second sheet-transferring path, and

a rotation of the intermediate roller is in synchronism with a resumption of rotation of the resist roller; and

second sheet detection means in the second sheet-transferring path, the second sheet detection means for detecting the one-side printed sheet transferred into the second sheet-transferring path,

the two-side image forming apparatus (i) stopping the one-side printed sheet that is detected, when the second sheet detection means detects the one-side printed sheet, and (ii) resuming transfer of the one-side printed sheet in a predetermined timing.

X. EVIDENCE APPENDIX

No evidence has been submitted under 37 C.F.R 1.130, 1.131 or 1.132. No other evidence has been entered by the Examiner and relied upon in this appeal.

I. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.